

**Responses to Comments
Draft Lower Boise River
Total Maximum Daily Load (TMDL) Allocation Document**

DEQ Boise Regional Office
12/18/98

Introduction

The Draft Lower Boise River TMDL document was available for public comment from its first announcement in Treasure Valley newspapers on Sunday, September 13, 1998, through November 13, 1998. DEQ presented the TMDL to the public for questions on October 1, 1998. Many excellent comments were received from a variety of interested parties throughout the Treasure Valley that have proved helpful for preparing the final TMDL that will be submitted to the US Environmental Protection Agency for approval. The following text summarizes the comments that were received, provides responses to individual comments, and summarizes the items that DEQ changed or clarified to prepare the final Lower Boise River TMDL document.

Log of Comments Received

Total Number of Comment Letters Received: 17

Agencies

US Environmental Protection Agency
Idaho Department of Fish and Game

Agricultural and Drainage

Idaho Farm Bureau Federation
Ada County Drainage District Number Three, represented by Elam & Burke
Nampa Meridian Irrigation District, with 11 partners: Pioneer Irrigation District, Middleton Irrigation District, Drainage District No. 2, Boise Valley Irrigation Ditch Company, Farmers Union Canal Company, City of Eagle, City of Middleton, City of Notus, City of Star, Star Water and Sewer District, Idaho Water Users Association, represented by Ringert Clark
Idaho Water Users Association

Industry

ConAgra, Inc., represented by Thompson and Ashcraft, L.L.P.
Idaho Power Company

Municipalities

Boise City Public Works
Boise Municipal Storm Water NPDES permit co-applicants

Environmental

Idaho Conservation League
Idaho Rivers United
Trout Unlimited, Ted Trueblood Chapter

Other Parties

Lower Boise River Watershed Advisory Group
Denyce M. Verti

Format:

All comments are either quoted or summarized below. *DEQ responses are shown in italics.*

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United States Environmental Protection Agency

Comment, paragraph 2, page one, "EPA has not reached a resolution regarding whether flow alteration is a pollutant under S303(d) of the Clean Water Act.

DEQ does not recognize the need to develop a TMDL for flow alteration in the lower Boise River until the EPA Administrator has specifically identified that flow alteration is a pollutant that requires the development of load allocations.

Comment, page 2, Sub-basin Assessment: "The SBA would be more complete if sections were added describing vegetation and riparian conditions in the Lower Boise River Subbasin.

DEQ believes that the background information included in the TMDL is more than sufficient to characterize the subbasin with respect to the specific issues addressed by the TMDL.

Bacteria

Comment, page 2, Bacteria: "Will the Load Allocations for the tributaries be implemented in the Lower Boise River TMDL or in the tributary TMDLs?"

The bacteria load allocations must be implemented as a part of the implementation plan, to be developed within 18 months of the approval date of the lower Boise River TMDL.

Comment, page 2, Bacteria: "We are not clear why facilities on tributaries (e.g. Nampa) are included in the WLA table, ..."

Since the bacteria waste load allocations that have been presented will meet waster state water quality criteria and are identical to current Draft Final NPDES permit requirements, DEQ views the fecal coliform bacteria waste load allocations as a non-issue for EPA.

Comment, page 2, Bacteria: "Please clarify whether the column titled "Fecal Coliform Permit Limits" is intended to be the WLA's for these facilities.

Yes, the column with that title is intended to be the WLA's for these facilities. Please note that the requirements specified within that column match the numeric limits established in the Draft Final NPDES Permits for these facilities.

Comment, page 2, Bacteria: "The IDFG fish hatchery is identified as a point source which does not need a WLA. Please clarify whether they discharge fecal coliforms."

Fecal coliform habitats include the intestinal tracts of warm blooded mammals, water, soil, and plants, but not fish. The IDFG hatcheries on Eagle Island and in Nampa are not sources of fecal coliform bacteria, and as is appropriate, do not have NPDES permit limitations for fecal coliforms.

Comment, page 2, Bacteria: "Margin of Safety. Since the 50 CFU/100 ml geometric mean target is an applicable criteria [sic] in the Boise River from May 1 to September 30, please provide further explanation as to why it is a margin of safety."

DEQ has clarified the bacteria load allocations, and further clarified the margin of safety relative to the criteria.

Phosphorus

Comment, page one, bullet one under Major Issues, and page 3, Total Phosphorus: "The phosphorus TMDL which relies upon no net increase (NNI) of phosphorus does not meet the requirements of a TMDL because it does not ensure that water quality standards will be met in the Boise River, and because it lacks required TMDL elements.

DEQ concurs with the assessment that the total phosphorus load allocations as presented in the Draft Lower Boise River TMDL do not constitute a TMDL, and has withdrawn all load and waste load allocations for total phosphorus from the document. DEQ believes that establishing a firm no net increase requirement for sources of total phosphorus in the lower Boise River Watershed is necessary, and will apply its No Net Increase Rule (IDAPA 16.01.02.054.04 and .05) to the Boise River until appropriate phosphorus load and waste load allocations can be developed for the river. A schedule change will be put in place to make the nutrient TMDLs for the lower Boise River concurrent with the lower Snake River and Brownlee Reservoir TMDLs.

Comment, page 3, "We suggest also citing other nutrient related water quality standards, including IDAPA 16.01.02.200.05 and .07 regarding floating and submerged material and oxygen demanding materials respectively."

The Applicable Water Quality Criteria portion of the TMDL cites all of the criteria that are relevant to the evaluation of the listed and allocatable pollutants in the four segments of the Boise River covered by the Draft TMDL document.

Comment, page 3, "In the Lucky Peak Dam to Veteran's State Park reach, Idaho standards list DO criteria as 90% rather than 75% saturation for salmonid spawning. How many measurements were taken in this reach and what % were below 90% saturation? Would your conclusions be the same.

Please find below a complete review and display of all of the data used to evaluate dissolved oxygen in the Boise River and demonstrate that cold water biota and salmonid spawning uses are not impaired by dissolved oxygen. Please note that percent saturation values for dissolved oxygen apply only during the following time periods at the locations noted:

Lucky Peak to Veterans Park	October 15 to July 15, 90% of saturation
Veteran's Park to Star	October 15 to July 15, 75% of saturation
Star to the mouth (whitefish only)	October 15 to March 15, 75% of saturation

DEQ presents this information to clarify the following points:

1. In the data from the USGS synoptic monitoring program shown in Table 1, the USGS diurnal monitoring shown in Table 2, below, Boise City quarterly monitoring, and over 1200 measurements by the City of Meridian, NONE of the dissolved concentrations are less than 6 mg/l.

Table 1. USGS Synoptic monitoring program dissolved oxygen data

Note that NONE of these values, in terms of concentration and saturation, violate state water quality standards

Site	Dates	n	DO min mg/l	DO avg mg/l	DO max mg/l	%Sat min	%Sat avg	%Sat max
Diversion Dam	11/3/93 - 8/17/98	32	9.1	11.6	14.0	100	110	145
Glenwood	11/2/92- 9/18/98	51	8.4	11.3	15.4	95	112	152
Middleton	11/13/91- 8/18/98	38	7.6	11.3	14.1	85*	111	145
Parma	11/12/86- 8/18/98	71	6.4	10.5	17.3	77**	105	161

*Only one value below 90% of saturation, which does not coincide with the salmonid spawning season of October 15 to March 15 for this reach and thus does not violate state standards.

**Six values below 90% saturation, only one within that spawning season, and that value is greater than the 75% saturation requirement applicable to Parma.

2. In the reach of the river from Lucky Peak to Veteran's Park, all of the dissolved oxygen data used to support the TMDL are greater than 6.0 mg/l. Of the data at Diversion Dam, none have percent saturations less than 90. At Veteran's Parkway Bridge, 4 dissolved measurements from Boise City quarterly monitoring have

concentrations greater than 6 mg/l, but percent saturations less than 90%, calculated as 84%, 80%, 73%, and 70%. The City of Boise recorded three salmonid spawning season dissolved oxygen saturations that were less than 75% at Eagle Bridge, but none of the concentrations were less than 6.9 mg/l.

The City of Meridian collects dissolved oxygen data in the South Channel of the Boise River near Linder Road. From April 1992 to December, 1996, the city collected 1256 measurements of dissolved oxygen, NONE of which were less than 6.8 mg/l dissolved oxygen. Nine (seven tenths of one percent of the total number of measurements) of the measurements had percent saturations that were less than 75%, all of which occurred during the applicable salmonid spawning time period. The nine values less than 75% of saturation ranged from 67% to 74%. The summary statistics on the Meridian dissolved oxygen data are as follows:

City of Meridian Linder Road Data

n = 1256 measurements from April, 1992 through December, 1996

<i>Statistic</i>	<i>DO, mg/l</i>	<i>% Sat</i>
<i>min</i>	6.8	67
<i>Avg</i>	10.5	97
<i>MAX</i>	16.4	142

Because all of the concentrations measured are well above 6 mg/l, and so few of the saturations are less than 75%, these data do not demonstrate impairment to aquatic life in the lower Boise River.

Table 2. Summer Diurnal Dissolved Oxygen Data Statistics

All data were collected by the USGS over 24 hour periods during August and September of 1997

Site	Dates	n	DO min mg/l	DO avg mg/l	DO max mg/l	%Sat min	%Sat avg	%Sat max
Eckert Road	8/21/97 8/22/97	12	9.01	9.37	9.81	100.3	105.9	115.7
Glenwood	8/21/97 8/22/97	13	8.25	8.78	9.58	92.0	99.9	115.4
Middleton	8/28/97 8/29/97	12	6.40	7.50	8.85	73.2	87.3	105.6
Caldwell	8/28/97 8/29/97	12	7.65	8.32	9.29	87.5	97.3	110.9

Parma	9/4/97 9/5/97	12	7.08	7.98	9.30	78.8	90.2	103.5
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Note that all of these measurement were collected during August and early September, to evaluate diurnal dissolved oxygen conditions during hot months of the summer. The criterion applicable to the dates when these data were collected is that dissolved oxygen must be >6 mg/l to support cold water biota (these data are not within spawning time periods), and indeed all of the diurnal measurements meet that criterion. In fact, the minimum of all of the diurnal measurements shown in Table 2 is 6.40 mg/l, and none of the 24 hour averages was less than 7.50 mg/l. These data support the finding that dissolved oxygen is not a cause of impairment for aquatic life uses in the Boise River.

Comment, Total Phosphorus, page 3, "Table 12. It would be helpful to expand this table to show each of the point source dischargers to the Boise River or tributaries, including the water they discharge to, even though phosphorus data may not be available for many of them."

The phosphorus load and waste load allocations specified in table 12 have been removed from the document in response to EPA's contention that the draft language for total phosphorus does not have the minimum elements of a TMDL.

Comment, Total Phosphorus, page 3, "Please explain (or reference) the basis for the saying that phosphorus shows the best correlation with periphytic growth."

The reference for the statement is a report on the control of periphyton in the Clark Fork River with the following bibliographic information:

Dodds, Walter, K., and Val H. Smith, Managing excess chlorophyll levels in the Clark Fork River with nutrient controls, A Report Presented to the Montana Department of Health and Environmental Sciences, February 10, 1995, Revised April 1, 1995. "Our analyses reveal that both total N and P are much more closely related to biomass than are dissolved inorganic nutrients. We used three complementary approaches to predict the in stream TN and TP concentrations that should correspond to improved water quality in the Clark Fork..." page 5, item 3.

The report indicates that for periphyton growth in the Clark Fork River, the authors found that the best correlation between periphytic biomass and nutrient species was with total nitrogen and phosphorus, rather than dissolved species.

Comment, Total Phosphorus, page 3, "Please explain (or reference) the basis for choosing 1996 as a baseline year for no net increase."

The appropriate year for the total phosphorus baselines is 1996, for three reasons:

- *The state's no net increase rule became effective on December 1, 1996.*
- *Source load conditions: phosphorus loads from tributaries in 1996 represent typical, long term irrigation season flows, while treatment plants loads in 1996 represent current treatment technologies and operating conditions.*
- *The Watershed Advisory Group for the lower Boise River recommended that DEQ utilize 1996 as the baseline year for the phosphorus no net increase.*

Comment, Temperature, page 3, "No allocations, in stream temperature reduction targets or shading targets were identified for Lower Boise River. Therefore it does not meet a fundamental requirement of a TMDL, which is to achieve water quality standards, and would not be approvable by EPA."

DEQ's analysis demonstrates that the temperature conditions within the lower Boise River are the result of climatic conditions in the Treasure Valley, and are not controllable through load allocations in a TMDL. No TMDL will be developed for temperature on the lower Boise River.

Comment, Sediment, page 4, "We are concerned that the 50 and 80 mg/l TSS targets are not adequately protective of salmonid spawning uses, and early life stages of salmonids and non-salmonids."

The 50 and 80 mg/l targets developed in the TMDL are the appropriate criteria to protect aquatic life uses in the lower Boise River with respect to total suspended sediments.

Comment, Sediment, page 4, Table 15 needs a column heading that is more clear with respect to the waste load allocations.

DEQ will edit the column headings.

Comment, Sediment, page 4, The draft final permit for the West Boise WWTP plant will include a design flow of 24 MGD, which should be incorporated into the TMDL. The waste load allocations for total suspended solids for West Boise should be adjusted accordingly.

DEQ will modify the waste load allocation table entries for the West Boise treatment plant.

Comment, Sediment, page 4, "It is not clear whether the current permit limits for sand and gravel operations are being set as WLA's for these facilities."

The NPDES permits issued by the Environmental Protection Agency for sand and gravel operations specify a strict non-discharge requirement for all operational activities. Storm water runoff from these facilities is the only permitted discharge of water, and is required to meet concentration limits for total suspended sediments that are less than the criteria developed for the Boise River by DEQ. DEQ supports the EPA's approach to sand and gravel operations, and believes that EPA's approach to performance based permits for storm water discharge is also sound. The TMDL cannot issue waste load allocations for sand and gravel, since those facilities are already required to have NO operational discharge and because performance based permitting is the appropriate method for controlling storm water runoff. Waste load allocations would contradict the non-discharge requirements already in place.

Comment, Sediment, page 4, "How was the quantity of the reserved TSS load established? How does it relate to the load capacity? How will the reserve amount for each facility be incorporated into NPDES permits?

The reserve quantity of total suspended solids is based upon the projected growth in flow of each treatment plant over the next 20 years, and the permitted concentration limits for TSS for each facility. Thus, the reserve for a facility, in tons per day, is calculated as:

*(20 year build out flow - Draft Final permit design flow) * [TSS] Limit * Units conversion*

Where:

<i>20 year build out flow</i>	<i>= expected 20 year build out flow, in million gallons per day (MGD)</i>
<i>Draft Final permit design flow</i>	<i>= design flow in permit to be issued, MGD</i>
<i>[TSS] Limit</i>	<i>= permit limit for total suspended solids concentration, mg/l</i>
<i>Units Conversion</i>	<i>= 1.547 * 5.4 / 2000 to yield tons per day</i>

Comment, Sediment, page 4, EPA suggests additional clarification of how the load allocations, waste load allocations, and the reserve for growth combine with respect to the target criteria and load capacity for total suspended sediment.

DEQ will expand discussion of these topics within the TMDL document.

Comment, Sediment, page 4, "Please show how reduction targets were derived."

DEQ will expand discussion of the derivation of reduction targets.

Comment, Reasonable Assurance, p 5, "...please provide additional detail regarding the types of BMPs expected to be implemented, and pollutants they are expected to address."

The selection of best management practices will be accomplished in the implementation

planning process, which follows within 18 months of the approval of this TMDL. Many agencies such as the NRCS, the SCC, and the Soil Conservation Districts will participate in the selection of BMPs.